



Self-management Practices among Women with Type II Diabetic Mellitus and Associated Factors in Al-Diwaniyah City

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ABSTRACT

Objective(s): This study aimed to assess self-management among women with type II diabetes mellitus and associated factors in view of socio-demographic characteristics.

Method: A descriptive cross-sectional study conducted at the Diabetes and Endocrinology Center in Al-Diwaniyah City for the period from October 1st, 2022 to April 6th, 2023. The study sample consisted of 200 women who were selected according to the non-probability (purposive) sampling method. The questionnaire items were adopted and developed for the purpose of the study. The total number of items included in the questionnaire was 44 items for evaluating self-management practices of diabetes mellitus type II. Data were collected through interviews and analyzed by applying descriptive and inferential statistical analysis.

Results: The study results indicated that the average women age was 51 years. 60% were married, 50% were housewives, 26.5% were illiterate, 60.5% were urban residents and 40.5% had insufficient monthly income. Most (84%) of the study women with type II diabetes mellitus were found to engage in self-management behaviors at a fair (moderate) level ($MS = 44.66 \pm 9.956$). There were statistically significant differences in self-management behaviors among women according to age, monthly income, housing, educational level, and marital status.

Conclusions: The results of the current study showed significantly moderate self-management behaviors among women with type II DM diabetes. In particular, diabetic patients were not consistent in regular self-management behaviors as recommended due to lack of awareness regarding self-management practices.

Recommendations: An Awareness programs for patients with diabetes who are unmarried, who live in rural areas, or who have low educational levels are recommended in clinical practice to enhance self-management of diabetes.

ممارسات الإدارة الذاتية بين النساء المصابات بداء السكري من النوع الثاني والعوامل المرتبطة به في مدينة الديوانية

المستخلص

الأهداف: هدفت هذه الدراسة إلى تقييم الإدارة الذاتية بين النساء المصابات بداء السكري من النوع الثاني والعوامل المرتبطة بالمرض في ضوء الخصائص الاجتماعية الديموغرافية لهن.

المنهجية: دراسة مقطعية وصفية أجريت في مركز السكري والغدد الصماء بمدينة الديوانية للفترة من الأول من تشرين الأول 2022 إلى السادس من نيسان 2023. تتكون عينة الدراسة من ٢٠٠ امرأة تم اختيارهن وفق أسلوب أخذ العينات الغير الاحتمالي (الغرضية). تم التحقق من صحة الاستبيان من قبل الخبراء وتم التحقق من موثوقيتها من خلال دراسة تجريبية. بلغ إجمالي عدد الفقرات المدرجة في الاستبيان ٤٤ فقرة لتقييم ممارسات الإدارة الذاتية. جمعت البيانات من خلال المقابلات وحلت من خلال تطبيق التحليل الإحصائي الوصفي والاستدلالي.

النتائج: أظهرت النتائج أن متوسط عمر المشاركات كان ٥١ سنة. ٦٠٪ منهن متزوجات، ٥٠٪ منهن يعملن كربات بيوت، ٢٦.٥٪ لا يقران ولا يكتبن، ٦٠.٥٪ من سكنة الحضر، ٤٠.٥٪ منهن لديهن دخل شهري غير كافي. وُجد أن معظم (٨٤٪) من النساء المصابات بداء السكري من النوع الثاني ينخرطن في سلوكيات الإدارة الذاتية بمستوى معتدل (MS = 9.956 ± 44.66). كذلك وجد فروق ذات دلالة إحصائية في سلوكيات إدارة الذات لدى النساء حسب العمر، والدخل الشهري، والسكن، والمستوى التعليمي، والحالة الاجتماعية.

الاستنتاجات: أظهرت نتائج الدراسة الحالية بان سلوكيات الإدارة الذاتية كانت معتدلة إلى حد كبير بين النساء المصابات بداء السكري من النوع الثاني. على وجه الخصوص، لم يكن مرضى السكري متناسقين في سلوكيات الإدارة الذاتية المنتظمة على النحو الموصى به بسبب نقص الوعي فيما يتعلق بالممارسات الإدارية الذاتية.

التوصيات: توصى الدراسة ببرامج التوعية لمرضى السكري غير المتزوجات أو اللاتي يعيشتن في المناطق الريفية أو اللاتي لديهن مستويات تعليمية منخفضة في الممارسة السريرية لتعزيز الإدارة الذاتية لمرض السكري.

الكلمات المفتاحية: ممارسات الإدارة الذاتية، النساء، داء السكري من النوع الثاني.

Introduction

Diabetes mellitus has emerged as one of the most significant non-communicable diseases and a serious global health issue. In 2019, 9.3% of adults were living with diabetes worldwide, with an expected increase to 10.2% and 10.9% by 2030 and 2045, respectively ⁽¹⁾. Moreover, co-occurring disorders are more common than ever before, particularly in patients with severe illnesses like diabetes mellitus. This rise in prevalence has a significant impact on how chronic illness treatment is delivered ⁽²⁾. Chronic disorders account for 50% of visits to primary care clinics, while the prevalence of long-term conditions is rising daily ⁽³⁾. According to reports, individuals with chronic diseases cost 70% of the entire health budget ⁽⁴⁾.

The ability of an individual to control their symptoms, treatments, physical and psychosocial effects, and lifestyle

adjustments that come with having a chronic condition is known as self-management⁽⁵⁾. The broad definition of self-care, which refers to the capacity to look after oneself and engage in activities that will help one achieve, maintain, or promote optimal health, includes self-management ⁽⁶⁾. Self-care is usually incorporated under the notion of self-management in the literatures, while self-management has also been considered as a subset of self-care. Self-efficiency and empowerment are concepts that are closely related to self-management and self-care because they have characteristics that affect patients' behavior and allow them to actively participate in their daily treatment⁽⁷⁾.

Studies have shown that diabetic patients report self-management behavior differently depending on their sex. The study's findings from Nepal, showed that

women were 2.4 times more likely than men to exercise inadequate self-care ⁽⁸⁾. This result was comparable to that from Pokhara, Nepal study found that (35%) of women had poorer self-care efficacy for diabetes than (65%) of men ⁽⁹⁾. This might be a result of the social structure between both sexes differing in terms of lifestyle modifications including exercise, medication compliance, and other helpful behaviors ⁽¹⁰⁾. Thus, this study was conducted on a sample of women with type II diabetes and its associated factors.

Methods

Study Design and setting

A cross-sectional descriptive design involving surveys of women with type II diabetes mellitus. This approach aimed to describe the characteristics and prevalence of the phenomena under investigation during the period from October 1, 2022, to April 6, 2023. The study was conducted at Diabetes and Endocrinology Center in Al-Diwaniyah City. It is one of the health institutions affiliated to the Al-Diwaniyah Health Directorate.

Study Sample and Sampling

A non-probability (purposive) sampling of (200) women with type II Diabetes Mellitus who attended Diabetes and Endocrinology Center in Al-Diwaniyah. The participants were selected based on a set of inclusion criteria include: 1) Women were diagnosed with type II DM according to American Diabetes Association (ADA) criteria, 2) from different level of education, 3) with different age groups and 4) volunteer to participate in the study after his consent.

Data collection and Study Instrument

Women with type II DM were interviewed, explained the instructions, answered their questions regarding the

form, urged them to participate and thanked them for the cooperation. The interview technique was used on individual bases, and each interview took (15-20) minutes after taking the important steps that must be included in the study design.

The questionnaire items were adopted from Qasim and other (2018), and developed for the purpose of the study and based on extensive review of related previous studies. The questionnaire consists of the following parts: Part I: Women socio-demographic characteristics include their age, monthly income, residents, marital status, education level, occupation, duration of type II DM, presence of chronic comorbidities Part II: A total of (44) items of self-management measured on 3-level type of Likert Scale (0=Never, 1=Sometime and 2=Always). Accordingly, points can be taken range from 0-88. The higher average defined as good self-management. The questionnaire was validated by experts and then its reliability was verified through a pilot study. The Cronbach-alpha value in current was 0.86 which indicate the higher reliability.

Ethical Considerations

Official approvals were obtained to conduct this study from the College of Nursing / University of Baghdad in Baghdad City, and official permission was obtained from the Diwaniyah Health Directorate/ Training and Human Development Center. After explaining the main purpose and importance of this study to the participants, they were asked to provide their consent agreement. The strict confidentiality of the data taken from the study population. Before starting gathering data from participating women in this study, they were given a brief explanation about the scientific background of the research and the purpose of conducting it.

Women with T2DM were verbally informed about the study aims and were asked to participate, and this participation was voluntary. After they consented to take part in the study, they were given an anonymous questionnaire to complete in order to protect the participants' privacy.

Data Analysis

Results

The IBM SPSS 20.0 program was used for all the analyses that follow. Frequency and percentages were used to categorize the variables, while the mean and standard deviation were used to characterize the continuous variables. ANOVA-test to determine the significant differences. Statistical significance was defined as a two-tailed p .05

Table 1. Socio-Demographic Characteristics of women with type II diabetes mellitus

Socio-Demographic Variables	Classification	F.	%
Age /years <i>51 ± 11.553</i>	<30 years old	10	5.0
	30-39 years old	27	13.5
	40-49 years old	33	16.5
	50-59 years old	61	30.5
	60 and older	69	34.5
Monthly Income	Enough	50	25.0
	Certain limit enough	69	34.5
	Not enough	81	40.5
Residents	Urban	121	60.5
	Rural	79	39.5
Marital status	Single	19	9.5
	Married	120	60.0
	Separated	15	7.5
	Divorced	14	7.0
	Widower	32	16.0
Education level	Illiterate	53	26.5
	Read & write	28	14.0
	Elementary	42	21.0
	Middle school	17	8.5
	Secondary school	41	20.5
	College and above	19	9.5
Occupation	Housewife	100	50.0
	Government employ	57	28.5
	Privet sector employ	23	11.5
	Free business	7	3.5
	Retired	13	6.5

No= Number; %= Percentage; F=Frequency

Table 1 indicates that the average age mean for women is 51 years, (40.5%) of them had insufficient income, (60.5%) residents in urban areas, (60%) were married, (26.5%) were illiterate and (50%) were housewives.

Table 2. Self-management Practices for women with type II diabetes mellitus

Self-management	Rating	F.	%	M ±SD
	Poor (M=0-29.33)	11	5.5	44.66 ± 9.956
	Fair (M=29.34-58.66)	168	84.0	
	Good (M=58.67-88)	21	10.5	
	Total	200	100.0	

M=mean, SD=standard deviation

Table 2 demonstrates that (84%) of women with type II DM expressed an average self-care management with mean score of 44.66 (± 9.956).

Table 3. Statistical Differences in Self-management of women with type II DM and their Socio-Demographic characteristics

Self-management	Source of variance	Sum of Squares	df	Mean Square	F-statistic	P-value
Age	Between Groups	3.118	4	.780	21.497	.000
	Within Groups	7.072	195	.036		
	Total	10.191	199			
Monthly income	Between Groups	2.891	2	1.446	39.013	.000
	Within Groups	7.299	197	.037		
	Total	10.191	199			
Residents	Between Groups	.727	1	.727	15.212	.000
	Within Groups	9.463	198	.048		
	Total	10.191	199			
Marital status	Between Groups	3.542	4	.886	25.977	.000
	Within Groups	6.648	195	.034		
	Total	10.191	199			
Education level	Between Groups	2.578	5	.516	13.141	.000
	Within Groups	7.612	194	.039		
	Total	10.191	199			
Self-management	Between Groups	1.808	4	.452	.511	.672
	Within Groups	8.383	195	.043		
	Total	10.191	199			

df= degree of freedom, P-value= 0.001.

The analysis of variance showed that there were statistically significant differences in self-management practices among women with respect to their age (p=0.001), their monthly income (p=0.000), residents (p=0.000), marital status (p=0.000) and education level (p=0.000).

Discussion

The study sample is limited to women with type II DM diagnoses, and the age range between 60 and 59 recorded the greatest prevalence rate. These findings are supported by a study from Baghdad Iraq found that the majority of chronic disease are in the elderly ⁽¹¹⁾. Diabetes is a chronic condition that typically affects older individuals ⁽¹²⁾. Women with type II DM in the survey reported having insufficient monthly income. These findings are in line with a study carried out in Hilla, Iraq, which found that the majority of diabetics did not have an adequate monthly income ⁽¹³⁾. This is an undesirable outcome because patients with diabetes need a large monthly income to pay for self-care. Comparing urban and rural residents, urban residents outnumbered rural ones by a margin. According to research from the Baghdad Diabetic Center, the majority of women with type II DM were from urban regions since there are facilities for people with diabetes mellitus in city centers ⁽¹⁴⁾. Similarly, due to their high number, most rehabilitation facilities are located in city centers, and the majority of their patients come from urban areas ⁽¹⁵⁾. Findings on marital status showed that more than half of women were married. These results are consistent with a study from Baqubah City, Iraq ⁽¹⁶⁾. Considering their advanced age, it is typical to find that the majority of women with type II DM are married. Regarding education, the majority of type II DM reported being illiterate and in elementary school. This finding is consistent with findings from Karbala City, Iraq found that most of T2DM had informal education due to their gender as women ⁽¹⁷⁾. In regard with occupation, half of women with type II DM were housewife. This finding is supported by findings from AL-Diwaniyah city ⁽¹⁸⁾. This is attributed to the education level and occupation, most of the study sample are

primary school graduates, and this does not qualify them to get a job ⁽¹⁹⁾.

The study assessed the overall self-management behaviours among T2DM at Diabetes and Endocrinology Center in Diwaniyah City. Most of women with type II diabetes mellitus were found to engage in self-management behaviors at a fair (moderate) level. This is greater than that of a study conducted in Harari, Ethiopia, where 55% of the women with type II DM, engaged in inadequate self-care practices ⁽²⁰⁾. A 50 percentage of the women with type II DM in a different study conducted in Ethiopia had subpar self-care habits ⁽²¹⁾. This discrepancy might be brought about by sample size variations, gender disparities, socioeconomic status, and educational attainment. This percentage is less than study result from Tikur Anbessa specialized hospital in Ethiopia, where 44% of women with type II DM adhere to general self-care practices, and results from Nekemte Referral Hospital, where 45% of women with type II DM reported strong self-care practices ^(22,23). This significant disparity may be the result of the patient's lack of understanding the significance of each diabetes self-care activity, lifestyle variances, and cultural and socioeconomic differences. This study is comparable to a follow-up study of diabetic patients conducted in Addis Abeba's public health facilities and private clinics, where the prevalence of intermediate diabetes self-care was 47.7% ⁽²⁴⁾. Given that the majority of women with type II DM believed that a healthy diet was the most crucial component of self-management behaviors during diabetes management, the current results indicate that the women with type II DM at least have a basic understanding of the significance of self-management behaviors to control diabetes and prevent its complications. This is mostly due to eating disorders affects blood sugar levels directly. Ethiopians with diabetes who

similarly believed that nutrition was important for controlling their condition experienced similar results, despite they have poor overall self-management⁽²⁵⁾. The results of the current study revealed that diabetic women practiced extremely inadequate self-care. Patients with diabetes in particular did not consistently measure their blood glucose levels on a frequent basis as advised. The current study findings showed that diabetic individuals require an integrated strategy to intervention that includes both treatment and health education to improve their health and wellbeing. This make diabetes patients have a lack necessary abilities or engage in self-care activities infrequently, leading to poor self-management behaviors. Additionally, it demonstrates that healthcare professionals must pay attention to diabetes patients' disease management knowledge and problem-solving skills in addition to their self-care behaviors⁽²⁶⁾. Furthermore, type II DM patients in Iraq have inadequate understanding about and habits for managing their condition because Diabetes Self-Management Education program are lacking in Iraq, and it is impractical to directly adopt a validated program. Women were already validated in communities with different health beliefs and cultures from Iraqi patients. Hence, the development of culturally specific Diabetes Self-Management Education program is mandatory. Their enthusiasm for taking part in in-person instructional events is motivated by their understanding of the significance of diabetic self-management techniques⁽²⁷⁾. Mikhael (2018), found significance of teaching diabetes self-management to patients in order to increase their health literacy, knowledge, and skills necessary to properly self-manage their condition, reduce complications, and ultimately improve quality of life. These programs should also be culturally modified to meet local requirements and solve resident deficits. Moreover, an important intervention

to improve self-management through diabetes medication is one to help persons with diabetes control blood sugar levels and prevent numerous problems. Diabetes self-management education is a continuous process that helps persons with diabetes develop the information, skills, and capacities necessary for self-care⁽²⁸⁾.

According to the analysis of variance, self-management among women varied statistically significantly according to their age. Women with type II DM had significant poor self-management with increasing age, according to observations. This result consistent with studies from Nottingham⁽²⁹⁾, Australia⁽³⁰⁾, and Qatar⁽³¹⁾. The management of elderly T2DM patients is more challenging since older patients must deal with additional aging-related impairments. As a result, they participate less in self-management education programs and are less informed about the signs and complications of diabetes, which leads to lower self-management⁽³⁰⁾.

With statistically significant differences in self-management according to the monthly income, it was found that self-management is better for those who have an adequate monthly income. The findings of this study are in agreement with those from Riyadh and the Jazan Region-Kingdom⁽³²⁾ in Saudi Arabia⁽³³⁾. Patients have more possibilities to get diabetic self-management education when their annual income is higher, which results in better self-management. This is explained by financial constraints resulted in patients' inability to access diabetes clinical supplies and eat in line with appropriate dietary recommendations⁽³⁴⁾. Several type II DM patients in the United Arab Emirates⁽³⁵⁾, it was discovered, work full-time jobs to ease the financial load on their family. Because of their increased access to disease-related resources thanks to their economic independence, these patients are better able to manage their conditions.

There were statistically significant differences in the self-management of women according to their educational attainment. More education was associated with better self-management; therefore, the differences favored individuals with more education. This result is congruent with a study conducted in Ethiopia, which found that diabetic patients with less education were 3.6 times more likely to engage in unwanted care behaviors than those with greater education ⁽³⁶⁾. The result also agrees with research from North-West Ethiopia and Harrari ⁽²²⁾ ⁽³⁷⁾. This may be due to the increasing interest in health promotion among educated people, who also adopt and adhere to the desired self-care behaviors ⁽²²⁾. According to these studies, urban individuals exhibit superior self-management behaviors than rural ones. Studies carried out in North Ethiopia ⁽³⁸⁾ and Bangladesh ⁽³⁹⁾ and West Ethiopia showed findings were similar ⁽¹⁰⁾. Significant correlations were found between the living arrangement of diabetic patients and their unsatisfactory self-care behaviors. Patients with diabetes who lived in rural locations had a 3.1-fold higher likelihood of engaging in subpar self-care than those who lived in urban areas. It's probable that this is because health care facilities are more readily available in cities than in rural areas, and because rural areas have lower educational levels than urban areas.

With regard to marital status, there were statistically significant differences in self-management between women. According to the results of the current study, married women with type II DM had much better self-management than single, divorced, and widowed patients. This observation is consistent with those from Qatar ⁽⁴⁰⁾ found that the married people with type II DM typically reside with their families. Thus, self-management is typically a part of family and

social life, where family and friends support and encourage them ⁽⁴¹⁾.

Conclusion

The results of the current study showed significantly moderate self-management behaviors among women with type II DM diabetes. In particular, diabetic patients were not consistent in regular self-management behaviors as recommended due to lack of awareness regarding self-management practices.

Recommendations

Awareness of clinical practice for women with diabetes is recommended to enhance self-management of diabetes. There is also a need to conduct an educational program to teach diabetic patients about self-care, which will actually help them develop their own self-care, especially those who have long-term diabetes and suffer from comorbidities.

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